61. A method according to claim 57, wherein the bone morphogenetic protein is selected from the group consisting of BMP-2, BMP-4, BMP-6 and BMP-7.

62 A method according to claim 57, further comprising the step of maintaining the cell population *in vitro* in a culture medium such that step (b) includes providing the compound in the culture medium.

63. A method according to claim 57, wherein the undifferentiated mesodermal-derived cells are a population of hematopoietic stem cells.

64. A method according to claim 57, wherein the hematopoietic stem cells are selected from the group consisting of cord blood cells, fetal liver cells and peripheral blood cells.

67. A method according to claim 65, wherein the hematopoietic stem cells are obtained from adult bone marrow cells.

68. A method according to claim 57, wherein the cells are progenitor cells obtained from an adult human.

69. A method according to claim 57, wherein the cells constitute embryonic tissue.

70. A method according to claim 57, wherein the cells constitute an embryonic explant culture.

71. A method according to claim 70, wherein the embryonic explant culture is a blastocyst.

72. A method according to claim 57, wherein the cells are hematopoietic stem cells within the bone marrow of an animal.

73. A method according to claim 57, wherein the cells are hematopoietic stem cells present in the animal and are selected from the group of hematopoietic cells found in at least one of bone marrow, cord blood cells, fetal liver cells and peripheral blood cells.

74. A method according to claim 72, further comprising; causing the compound to contact the stem cells by administering an effective dose of the compound to the animal by any of oral, intradermal, subcutaneous, transmucosal, intramuscular or intravenous routes.

75. A method according to claim 57, wherein the first compound is capable of acting synergistically with the second compound so as to enhance the stimulation of at least one of hematopoiesis, endothelial cell proliferation and endothelial cell differentiation.

76. A method of stimulating a population of undifferentiated mammalian mesodermally derived cells to undergo at least one of hematopoiesis, endothelial cell differentiation and endothelial cell proliferation; comprising:

(a) contacting the cells with an embryo's extraembryonic tissue derived compound; and

(b) stimulating the cells to undergo at least one of hematopoiesis, endothelial cell proliferation and endothelial cell differentiation.

77. A method according to claim 76, wherein step (a) further comprises the steps of selecting the compound from a library of compounds obtained from cDNA of an extraembryonic tissue.

78. A method according to claim 77, wherein the step of selecting the compound, further comprises: screening the library of compounds in mammalian epiblasts, anterior ectoderm, blastocysts, or embryoid bodies.

79. A method of identifying a compound capable of stimulating undifferentiated mammalian mesodermally derived cells to undergo at least one of hematopoiesis, endothelial cell differentiation and endothelial cell proliferation; comprising:

(a) screening a library of compounds for biological activity consisting of at least one of hematopoietic activity, endothelial cell differentiation and endothelial cell proliferation activity, wherein the library is formed from proteins encoded by extraembryonic tissue and the activity is determined by a functional assay; and

(b) identifying the compound from the library that is capable of stimulating undifferentiated mammalian mesodermally derived cells to undergo at least one of hematopoiesis and endothelial cell differentiation and proliferation.

80. A method according to claim 79, wherein the functional assay utilizes undifferentiated mesodermally derived cells.

81. A method according to claim 80, wherein the functional assay is selected from the group consisting of cultured mammalian epiblasts, anterior ectoderm, blastocysts, and embryoid bodies assays.

Remarks

The claims have been amended as follows. Claims 1-56 have been canceled without prejudice and claims 57-81 have been added. No new subject matter has been added. Support for use of the terms "endothelial differentiation" and "endothelial proliferation" may be found on page 4, line 17 of the specification where blood islands are described as formed by differentiation of precursor cells and implicitly includes proliferation and on page 13, lines 3-15. Support for hedgehog and TGF-β are provided in dependent claims 3 and 10 prior to amendment. Support for WNT is provided in the specification on page 10, line 16. Support for the optional addition